

REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, the applicant respectfully submits that the pending claims are not anticipated under 35 U.S.C. § 102 and are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. **If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicant respectfully requests that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.**

The applicant will now address each of the issues raised in the outstanding Office Action.

Rejections under 35 U.S.C. § 102

Claims 2-9, 13-18, 20 and 22-33 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,349,306 ("the Malik patent"). The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Before addressing the patentable features of the various claims, the applicant again introduces the Malik patent.

The Malik patent concerns network management, including remote, centralized configuration of devices on the network. (See, e.g., Figure 1, column 3, lines 13-23, and column 5, lines 35-43.) In the Malik patent, a "configuration" is defined as a particular setting of device parameters that govern the operational characteristics of a network device

(See, e.g., column 1, lines 22-24.), or all attribute/value pairs obtained by interrogating selected models through a template (See, e.g., column 3, lines 59-61.). In the Malik patent, "models" are defined as representing different associated network devices, and each model includes attribute values for parameters of the particular network device. (See, e.g., column 2, lines 11-13.) Finally, in the Malik patent a "template" is defined as a list of attributes for a device of a certain model type. (See, e.g., column 3, lines 24-26.)

To reiterate, as shown in Figure 1, the configuration management system 18 is separate from the device of a live network 10 actually being configured. ***This remote, centralized configuration management does not teach, nor does it suggest, comparisons by a data forwarding device of configurations, for the data forwarding device, stored on the data forwarding device.***

In the Malik patent, a verification step permits the comparison of attribute/value pairs of a loaded (i.e., saved) configuration of a model with the actual attribute/value pairs captured from the model, and the display of the results of such a comparison. (See, e.g., column 9, lines 20-27.) The output may be a report of discrepancies between attribute/value pairs after the comparison. (See, e.g., column 7, lines 34-42.) More specifically, in the Malik patent, the verify option enables a user to verify whether the actual attribute values of a model match previously loaded attribute values of a created configuration. (See, e.g., column 8, lines 14-16.) ***Thus, the verify configuration function in the Malik patent is limited to comparing values of attributes in two configurations -- one configuration as loaded to a device, and the other as read from the device. The teaching does not extend to comparing a configuration that***

has not been loaded and committed on a device with an instance or copy of the configuration that has been saved on the device, nor does it extend to comparing statements without regard to parameter values in such configurations.

Although the Malik patent discusses displaying hierarchical relationships between network devices of a network (See, e.g., Column 4, lines 58-61.), this has nothing whatsoever to do with hierarchically arranged statements in a configuration as claimed.

Claims 2-9

First, since claim 5 has been canceled, this ground of rejection is now moot with respect to claim 5.

Independent claim 4, as amended to include the features of canceled claim 5, is not anticipated by the Malik patent because the Malik patent does not teach comparing at least portions of configurations with hierarchical statements, where the comparison of configurations only includes a first statement and descendants from the first statement. Claim 4, as amended, is reprinted below with this feature in bold typeface:

4. A method comprising:
 - a) accepting at least a part of a selected set of configuration information for a data forwarding device;
 - b) accepting at least a part of a set of candidate configuration information for the data forwarding device; and
 - c) determining differences, if any, between
 - the at least a part of the set of candidate configuration

information for the data forwarding device, and
- the at least a part of the selected set of configuration information for the data forwarding device,
wherein the set of candidate configuration information for the data forwarding device includes a plurality of statements,
wherein a first statement of the plurality of statements of the set of candidate configuration information for the data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration,
wherein the selected set of configuration information for the data forwarding device includes a plurality of statements,
wherein a first statement of the plurality of statements of the selected set of configuration information for the data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration,
wherein the at least the part of the set of candidate configuration information only includes a defined first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration, and
wherein the at least the part of the selected set of configuration information includes a corresponding first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration. [Emphasis added.]

As stated on lines 22-25 of page 23 of the present application, this feature is advantageous because such

hierarchical scoping capabilities may be used to limit a compare configurations operation, thereby permitting users to work on smaller, more manageable parts of sets of configuration information. Irrelevant parts of a large, complex configuration need not be compared. The Malik patent does not teach such features.

The Examiner contends that the Malik patent teaches this feature, citing column 3, lines 46-51, column 4, lines 8-12, column 6, lines 31-35 and 39-47, and Figure 3. (See Paper No. 11182004, page 2.) However, these sections of the Malik patent merely concern attributes of a configuration and attribute values of a configuration. The Malik patent cites and incorporates U.S. Patent No. 5,261,044 ("the Dev patent"), which discusses hierarchical **relations** between models. However, this is not relevant to the presently claimed invention because **model relations and associations has nothing to do with relationships between configuration statements in a configuration.**

The Examiner contends that Malik refers to a list of attributes in the configuration and their instance IDs, if any, and concludes that this implies that a particular attribute may contain one or more sub-attributes, citing Figure 3. (See Paper No. 07222005, page 4.) However, the Malik patent merely discusses a list of attributes in a configuration. All this implies is that the configuration can have more than one attribute. The underscoring used in Figure 3 of the Malik patent does not denote a hierarchical relationship, but is merely part of the attribute name. Finally, even assuming, arguendo, that the Malik patent teaches or suggests hierarchical attributes, the claimed invention concerns hierarchical statements of a configuration.

The Examiner also contends that editing a particular section of a configuration implies a step of comparing. (See Paper No. 11182004, page 3.) However, **editing** statements is different from **comparing** statements.

Finally, the Examiner now contends that the Malik patent refers to router configuration files, which are known to follow a hierarchical structure. (See Paper No. 07222005, page 5.) Even assuming, arguendo, that this is true, the particular way in which the claimed invention compares parts of hierarchical configurations is neither taught, nor suggested, by the Malik patent.

The Examiner contends that claim 5 (along with claims 6-9 and 15-18) merely "describe the act of editing a network device's configuration (i.e. a router's configuration)", which "is well know to one of ordinary skill in the art at the time the invention was made." (Paper No. 07222005, page 6.) The applicant respectfully disagrees, and respectfully submits that the Examiner is grossly simplifying and generalizing the claim language, effectively ignoring various features of the claims. This is improper. The Court of Appeals for the Federal Circuit ("the CAFC") has repeatedly emphasized that anticipation is established **only if** all elements of an invention, **as stated in a patent claim, are identically set forth**, in a single prior art reference. That is, anticipation requires strict identity, not merely substantial identity.

Accordingly, independent claim 4, as amended, is not anticipated by the Malik patent for at least these reasons. Since claims 2, 3, and 6-9 depend from claim 4, these claims are similarly not anticipated by the Malik patent.

Further, dependent claim 7 is not anticipated by the Malik patent because it further recites that the first statement is selected by a user. Further, dependent claim 6

is not anticipated by the Malik patent because it recites that the first statement is based on a statement of hierarchical candidate configuration on which the user is presently working. Accordingly, these dependent claims are further not anticipated by the Malik patent for at least the foregoing reasons.

Further, dependent 9 is not anticipated by the Malik patent because it recites associating a predetermined permission value with a user that is logged in, and determining whether the logged in user is permitted to access one of at least two categories at a given hierarchical level of configuration information based on the predetermined permission. In this way, the users permitted to access and/or edit various hierarchical levels and categories of configuration information may be limited.

Claims 13, 22, 25 and 26

Independent claims 13, 22, 25 and 26 are not anticipated by the Malik patent because the Malik patent does not teach ***comparing, with a data forwarding device, configurations for that particular data forwarding device***. In at least some of these claims, one or both configurations are stored on the particular data forwarding device.

As discussed above, the Malik patent teaches a remote, centralized configuration management. For example, as shown in Figure 1, the configuration management system 18 is separate from the device of a live network 10 actually being configured.

The Examiner contends that the acts of loading and verifying configurations teaches this. (See Paper No. 11182004, page 6.) This does ***not*** teach comparisons by a data forwarding device of configurations ***for the particular data***

forwarding device, stored on the data forwarding device.

Rather, this comparison is done at a central location, not at the data forwarding device for which the configuration will be used. Accordingly, independent claims 13, 22, 25 and 26 are not anticipated by the Malik patent for at least this reason.

The applicant notes that in the rejection of claim 10 under 35 U.S.C. § 103 (discussed below), the Examiner concedes that the Malik patent does not disclose that the comparison of configurations for a data forwarding device, stored on the data forwarding device, is done on the data forwarding device itself. (See Paper No. 07222005, page 9.) Thus, these claims cannot be anticipated by the Malik patent. Furthermore, these claims are not rendered obvious by the Malik patent for reasons discussed below with reference to claim 10.

Claims 14-18, 20, 23, 24, 31 and 32

Independent claim 14 is not anticipated by the Malik patent because the Malik patent does not verify or compare configurations **before** a candidate configuration (or a copied instance thereof) is loaded or committed to a data forwarding device. Claim 14, as amended, is reprinted below with this feature depicted in bold typeface:

A method for determining differences in at least a part of sets of configuration information, comprising:

- a) accepting at least a part of a first set of configuration information for a data forwarding device, **wherein the first set of configuration information has not been saved on the data forwarding device as a committed configuration, and wherein no copied instance of the first set of configuration information has been saved on the**

data forwarding device as a committed configuration;

b) accepting at least a part of a second set of configuration information for the data forwarding device, **wherein the second set of configuration information has been saved on the data forwarding device;** and

c) determining differences, if any, between

- the first set of configuration information for a data forwarding device, and
- the second set of configuration information for a data forwarding device.

[Emphasis added.]

As stated in the specification, one advantage of the present invention is that it helps users to detect errors in a candidate configuration information, for example, **before committing to that candidate configuration** information. (See, e.g., page 23, lines 20-22.) This can be important since a committed configuration can begin to affect the network of which the data forwarding device is a part.

On the other hand, in the Malik patent, the verify operation, cited by the Examiner as teaching the claimed invention, is used to confirm whether a load was actually successful or not. More specifically, when a load is commanded, a configuration is loaded from a central terminal to an actual networking device (referred to as a "model"). A user might want to know if the configuration was actually loaded properly. To check this, the user can use the verify operation to capture the actual configuration, as it exists on the model, and compare it to the configuration that was loaded to the model. To put it more simply, in the Malik patent, the load command is like a write command, where the a

configuration is sent from a central location to a remote device to be written onto the remote device. The verify command is like a read and compare command. The previously loaded configuration is compared with a configuration actually read from the device. **If the load was successful, the two configurations should be the same since the loaded configuration is merely a copy or instance of the original configuration.** In any event, the comparison occurs after the user already committed the configuration to the device.

In view of the foregoing, claim 14 is not anticipated by the Malik patent for at least this reason. Since claims 15-20, 31 and 32 depend, either directly or indirectly from claim 14, they are similarly not anticipated by the Malik patent. Since claim 23, as amended, includes a similar feature, it is similarly not anticipated by the Malik patent. Since claim 24 depends from claim 23, it is similarly not anticipated by the Malik patent.

Claims 14 and 23 have been amended to more clearly distinguish the claimed invention from the verify operation of the Malik patent in which a loaded copy of a configuration is compared to another instance of the same configuration.

Further, dependent claim 20 recites a feature similar to that discussed below with reference to claim 11. Accordingly, claim 20 is further not anticipated by the Malik patent for the reason discussed below with reference to claim 11.

Claims 27-30 and 33

Each of these claims depend from either claim 10 or claim 11, which were not found to be anticipated by the Malik patent. Accordingly, each of these claims cannot be anticipated by the Malik patent at least due to its dependence from claim 10 or 11.

Rejections under 35 U.S.C. § 103

Claims 10, 11 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Malik patent. The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Claims 10 and 19

Independent claim 10 is not rendered obvious by the Malik patent because the Malik patent neither teaches, nor suggests, **comparing, with a data forwarding device, configurations for that particular data forwarding device.** Claim 10 is reprinted here with this feature depicted in bold typeface:

A method comprising:

- a) accepting at least a part of a selected set of **configuration information for a data forwarding device;**
- b) accepting at least a part of a set of **candidate configuration information for the data forwarding device;** and
- c) **determining differences, if any, between**

- the at least a part of the set of **candidate configuration information** for the data forwarding device, and
- the at least a part of the **selected set of configuration information** for the data forwarding device,

wherein the act of accepting at least a part of a selected set of configuration information for a data forwarding device is performed by

accessing a storage device of the data forwarding device,

wherein the act of accepting at least a part of a set of candidate configuration information for the data forwarding device is performed by accessing a storage device of the data forwarding device; and

wherein the act of determining differences, if any, between

- the at least the part of the set of candidate configuration information for the data forwarding device, and
- the at least the part of the selected set of configuration information for the data forwarding device,

is performed by a component of the data forwarding device. [Emphasis added.]

As discussed above, the Malik patent teaches a remote, centralized configuration management. For example, as shown in Figure 1, the configuration management system 18 is separate from the device of a live network 10 actually being configured.

The Examiner seems to take contradictory positions, stating that both (i) the act of determining differences "is performed by a component of the data forwarding device" (Paper No. 07222005, page 8.), and (ii) the Malik patent does not disclose that the act of determining differences is performed by a component of the data forwarding device (Paper No. 07222005, page 9.). Since the Malik patent clearly does not teach this, since the Examiner seemed to appreciate this during an earlier telephone interview, and since the Examiner attempts to provide a rationale for modifying the Malik patent, the applicant assumes that the Examiner's position is

that the act of determining differences is not performed by a component of the data forwarding device, but to do so would have been obvious.

Specifically, the Examiner states:

It is well known in the networking art that a computing device (i.e. computer) **can be** designated as a routing device similar to a router with the use of multiple NIC cards. Therefore, it would have been obvious to one of ordinary skill in the art at the time ... the invention was made to combine the teachings of Malik with the teachings of common knowledge in the networking art to present a computing device that is able to compare and determine the differences between the committed and potential configurations, while performing routing functions at the same time. [Emphasis added.]

Paper No. 07222005, page 9.

Even assuming, arguendo, that having computers performing routing functions was known, one skilled in the art would not have been motivated to apply the verify function of the Malik patent locally. As discussed above, the Malik patent espouses centralized configuration management. For example, the Malik patent states, "the administrator may create new configurations, load these configurations to devices anywhere on the network, and then verify whether the configurations have changed." Column 3, lines 20-23.

This remote, centralized configuration management does not teach, nor does it suggest, comparisons by a data forwarding device of configurations, for the data forwarding device, stored on the data forwarding device. Further, the purported fact that a computer **can be** modified to have routing capabilities would not have suggested to one skilled in the

art to use the verification of the Malik patent locally, on a computer-based data forwarding device.

Accordingly, claim 10 is not rendered obvious by the Malik patent for at least the foregoing reason. Dependent claim 19 is similarly not rendered obvious (and is also allowable for the reasons described above with respect to claim 14, from which claim 19 depends).

Claim 11

Independent claim 11 is not anticipated by the Malik patent because the Malik patent does not teach determining differences, if any, between at least a part of a set of candidate configuration information for a data forwarding device, and at least a part of a selected set of configuration information for the data forwarding device, by considering changes to configuration statements **without regard to parameter values**. Claim 11 is reprinted below with this feature depicted in bold typeface:

11. A method comprising:
 - a) accepting at least a part of a selected set of configuration information for a data forwarding device;
 - b) accepting at least a part of a set of candidate configuration information for the data forwarding device; and
 - c) determining differences, if any, between
 - the at least a part of the set of candidate configuration information for the data forwarding device, and
 - the at least a part of the selected set of configuration information for the data forwarding device

wherein the set of candidate configuration information for the data forwarding device includes a plurality of statements,

wherein the selected set of configuration information for the data forwarding device includes a plurality of statements, and

wherein the act of determining differences, if any, between

- the at least a part of the set of **candidate configuration information** for the data forwarding device, and
- the at least a part of **the selected set of configuration information** for the data forwarding device, **considers changes to statements without regard to parameter values.** [Emphasis added.]

That is, in one embodiment consistent with the present invention, if the only difference between a statement in one configuration and a corresponding statement in another is a different parameter value, this difference is ignored by the comparison. The Malik patent neither teaches, nor suggests, this feature.

The Examiner did not address this feature of claim 11 in the most recent Office Action. Accordingly, the applicant respectfully submits that claim 11 is in condition for allowance. In a previous Office Action, the Examiner cited the model load and verify features of the Malik patent as teaching this feature. (See Paper No. 11182004, page 6.) However, as stated above, in the Malik patent, a verification step permits the comparison of **attribute/value pairs** of a configuration of a model with **attribute/value pairs** of another configuration, and the display of the results of such a comparison. (See, e.g., column 9, lines 20-27.) More specifically, in the Malik patent, the verify option enables a user to verify whether **attribute values** of a model match

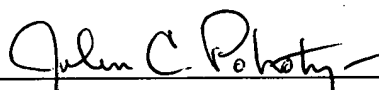
attribute values of a created configuration. (See, e.g., column 8, lines 14-16.) Thus, the verify configuration function in the Malik patent is limited to comparing values of attributes in two configurations. The teaching does not extend to comparing statements in such configurations. During an earlier telephone interview, the Examiner better appreciated this feature, but indicated that he would need to further consider whether it was obvious. Although the Examiner rejected claim 11 as being obvious, he did not address the feature discussed above and has not established *prima facie* obviousness. (See, e.g., MPEP 2143.03.)

Conclusion

In view of the foregoing amendments and remarks, the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicant requests that the Examiner pass this application to issue.

Respectfully submitted,

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